Advisor

THE IMPACT OF A NEW SITE COST CONTROL SYSTEM ON EMPLOYEE'S ATTITUDES AND BEHAVIOR

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RESEARCH REPORT

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ABSTRACT

This paper is a case study of the impact of the employee's attitudes and behavior under the change of a new site cost control system form an existing departmental cost control system in a joint venture construction project carried out by a local and an American contractor.

Primary data for this study were collected by interviews, questionnaires, observations and review of system manuals. Secondary data were collected mainly by literature review on relating topics as listed on the bibliography.

In this case, the major problems in the existing cost control system were identified as procedural problems in formulating cost plan, deficiency of inaccurate data collected and long preparation time required for the cost report. A new site cost control system was introduced and expected to improve these problems by introducing more co-relations between planning, programming and cost control and locating the cost control system on site to shorten the time required, and communication gaps in preparation of the

cost report. The implementation process and resistances observed due to this change were also described. After the analysis of the primary and secondary data, different interest groups of the employee's possible perceptions on the change and micro-politics involved were discussed and investigated to provide possible explanations of resistances. Consequently, it was concluded that, among many factors, the most important issue for the negative perception to this change was due to change in established social relationships rather than technical innovation changes. Finally, recommendations for facilitating positive perceptions of the changed relationship were also discussed to overcome possible resistances for implementation of future similar changes.

ACKNOWLEDGE

Many persons have played a direct or indirect part in making this research possible. First and foremost the authors wish to thank all the faculty members of the three year MBA Programme of the Chinese University of Hong Kong for the happy and fruitful experiences enjoyed with them during the period in which the basic theory of management and administration was being developed. In particular, we wish to acknowledge the contributions of Dr. A. Mailer, who supervised the work and played a key role in providing guidance to the authors. Dr. Mailer has also carefully read the manuscript and made many valuable suggestions for improving the contents.

Those colleagues who were involved in the implementation of this new cost control system and responded to our questionnaires are gratefully acknowledged. Specially, the thoughtful idea given by Mr. Gerrit De Nys and Mr. L.B. Thompson during interviews were vital for the author's development of the possible explanations of the resistances. Without their contributions, the findings and conclusion of this paper will be interpretated very much differently.

Finally, we would like to express our appreciation to Mrs. Rosa Wong for typing the drafts of the manuscript with the following revisions. Her faithful patience and encouragement to the authors are gratefully acknowledged.

Ka-leung Chan

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INTRODUCTION

To cope with the dynamic of business world and ever changing market situation, changes in organization structure, technology and strategy are unavoidable. Resistances to such changes are very commonly observed due to various reasons and factors, such as lack of communication, training and participation etc. Thus, successful implementation of organization changes are crucial to it's survival and growth.

This is a case study of the implementation of a new cost control system in a building project. An effective and efficient cost control system is essential to the management of a building project, which is a complex process involving numerous items of works of great variety, such as piling, concreting, steel-fixing, external finish, interior decoration, building services etc. Huge quantities of input resources are required in daily operations. The whole

process is further complicated by such characteristics as the construction workers are transient and recruited on ad-hoc basis, the site locations and conditions vary, and the ever-changing weather conditions have significant effects on progress and construction cost.

The building project in this case has a contract sum of approximately HK$1,100 million. It was carried out by a joint venture of a local contractor and a American contractor. This was the third project undertaken by the joint venture. In the first two projects, the local contractor's Cost Control System was adopted, which was basically carried out through a centralized department in the head office. The senior management of the joint venture team had noted several deficiencies of such a departmental Cost Control System. Based on the American contractor's foreign experience, a new Site Cost Control System was proposed for this third joint venture project. The change was implemented and did successfully reveal the sources of excessive wastage in several incidents. However, the new Cost Control System has brought impact on the employee's attitudes and behavior, and the performance of the new system was not as good as it should have been.

1.1 OBJECTIVES

The objectives of the case study are :-

i. to examine critically and identify problems in the existing Cost Control System;

ii. to study the new Site Cost Control System and reveal its proposed technical advantages over the existing system;

iii. to investigate the implementation process of the new system and its impact on the employees' attitudes and behavior;

iv. to explain the employees' resistance to the change; and

v. to present recommendations on implementation of the change.

1.2 SIGNIFICANCE OF STUDY

Building projects in Hong Kong are becoming more complex. Enormous amount of cost data are generated daily and need to be converted into sensible and useful parameters in aiding the decision making process for execution of daily business affairs and long term strategic planning. Many local contractors are adopting cost control system similar to the departmental cost control system in the case. The study introduces the new Site Cost Control System which will facilitate an effective and efficient handling of the cost data.

Since a technically well designed system may not necessarily bring the desirable results, the study will go beyond and reveal the organization factors to be considered in implementing such a change. It is anticipated that more contractors will shift to the Site Cost Control System, and experience gained from the studied case will be of value to the construction industry.

1.3 METHODOLOGY

1.3.1 DATA COLLECTION

The data are collected in two main ways: secondary data are obtained by literature review on relating topics as listed on the bibliography. These include organization behavior, management of change, project management and cost control system etc.

Primary data are obtained via various means. Details of the departmental cost control system and the new site cost control system are gathered based on the users manual, standard cost control procedures and forms. Questionnaires are used to reveal the attitudes of the project team members towards the previous and the new cost control system and their response to the new system. One of the authors has been involved in the change process and his observation generated essential data on how the project team members behaved under the new system.

1.3.2 DATA ANALYSIS

The data collected from the questionnaires, personal interview and observation are essentially qualitative. They will be analysed under the framework of the organization background, the organization culture and micro-politics.

Recommendations on measures to be adopted to minimize resistance to the implementation of new Site Cost Control System will be devised based on the findings in the data analysis.

CHAPTER II

ORGANIZATION BACKGROUND

2.1 BACKGROUND OF THE LOCAL COMPANY :

The local company is a young, energetic and aggressive construction company which has substantial share of the local market. In comparison with the contract sum which the company currently operates, the number of employees is relatively small since major parts of the project are subletted to sub-contractors, including labour, plants and specialized trades. Actually, this is one of the major factors for this company's fast expansion. Resources including labour, plants and capitals are gathered from these sub-contractors for operation of the project. Therefore, project management in this company is mainly referred to the management of sub-contracts.

Fast expansion of the company has led to rapid internal promotion. Many young aggressive professionals are promoted to the management positions after they have shown good performance in one or two projects. Since each building project has its own characteristics and problems, good performance on one project does not necessarily imply that the staff has gained adequate experience for handling more complicated projects. Thus, some projects are managed not as satisfactory due to the inadequate experience of the managers.

The rapid internal promotion has created a general target among the staffs of getting promotion after one or two projects. A hard working and ambitious atmosphere is thus generated. However, this has also led to frustrations among those whose expectation of quick promotion is not met. Thus, a high turnover rate is resulted.

The company's policy and style have had drastic changes in the past few years. This is on one hand driven by the dynamic environment of the construction industry in Hong Kong and, on the other hand, results from the frequent changes in the top management. Because of its frequent changes of management and policy, the staffs usually look

at a new change suspiciously wondering how long it will last. Most changes are initiated from the top, and staffs tend to view the changes as the wish of the new management to do something different, rather than as an improvement.

2.2 BACKGROUND OF THE FOREIGN CONTRACTOR :

The foreign construction company is a relatively mature and aggressive American construction company which has a major share of the market in one of the States at the Pacific Basin. Like most of the foreign contractors, they run their home project mainly by direct labour and tradesman. Only for specialized trades or under special request by the client will portion of the work be subletted to sub-contractors. Thus, the project management in the foreign construction industry is basically management of direct labour and plants, instead of management of sub-contractors as in Hong Kong.

In the late seventies and early eighties, because of the American construction market recession, the company had surplus resources and looked for expansions in foreign

market. At the same time, China adopted the open door policy which attracted and welcomed foreign investors to do business in China. Consequently, the Hong Kong office was established with the intention of acting as a stepping stone to the China market. However, because of the hazy and unstable Chinese economic policy, there was only one project successfully awarded and completed with marginal profit in China. On the other hand, the Hong Kong construction industry was recovering very fast from its recession after the signing of the Sino-British Agreement for returning Hong Kong to China by 1997. The American company assessed the opportunities in Hong Kong and found that they could offer their advanced technology and management skills in construction.

Meanwhile, they tried not to involve in the labour intensive and daily operational construction activities because the local contractors are experienced in organizing such activities in an efficient and economical way. Therefore, their targeted market was to provide pure project management services and give construction technology advice to clients.

2.3 JOINT VENTURE HISTORY

In 1982, the local contractor and the American contractor entered into joint venture to undertake building projects in Hong Kong. The first two joint venture projects were very successful. The essence for this success was mainly a result of fitness of background and joint venture intention. At that time, the foreign company was looking for market and provided not only advanced management and technology, but also financial backup. On the other hand, the local contractor was looking for financial backup and offered their experience in organizing the labour intensive daily operations together with their well established local connections. Consequently, under the joint effort and close co-operation of these two companies, both projects were completed on time, within budget and with satisfactory quality.

In these joint venture projects, the foreign contractor only provided few staffs to the project team. The group process and culture are basically similar to local contractor's existing ones. In the third joint venture project, an advanced management tool, ie. a site cost control system, was introduced by the foreign contractor to

the project team. This has brought a disturbance to the established relationship. The cost control system prior to the introduction of the new system is examined in the following chapter.

CHAPTER III

THE EXISTING COST CONTROL SYSTEM

3.1 ELEMENTS OF COST CONTROL SYSTEM

The cost control system in a building project generally consists of three basic elements :-

1. Establishment of Cost Budget

Building jobs are usually offered by inviting contractors to submit tenders for the carrying out of the works. In preparing the tenders, the contractors are actually in the process of establishing their cost budget to complete the works. Once the tender is accepted by the client, the contractor is binded to complete the building job in return for the sum entered in the tender.

2. Formulation of Cost Plan

This is either carried out in the tender stage or after the award of the tender. The contractor is to forecast the revenues and expenses along the timeframe of the construction stage.

3. Implementation of Cost Control

This is carried out in the construction stage. The actual revenues received and expenses incurred are gathered and compared with the cost plan so as to reveal the financial status and progress of the project. (Refers to Fig. 1)

Cost control systems adopted by contractors range from simple guesstimate to sophisticated computerized analysis system, depending on the technological knowhow of the contractor. Besides, since the cost control function is carried out on project basis to monitor the performance of the project team, the cost control system adopted is closely related to the project team structure and the company's policy towards decentralization.

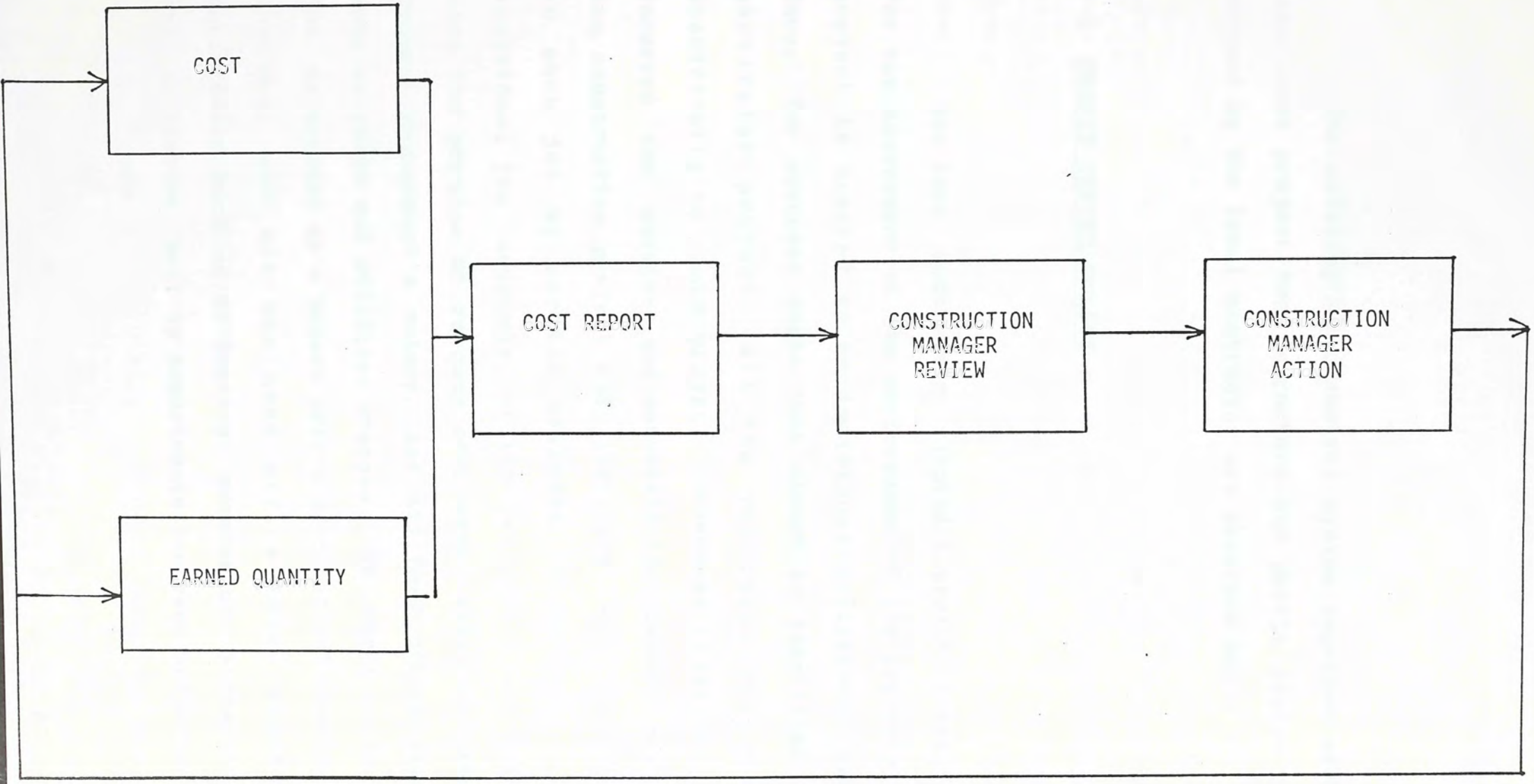


Fig. 1 CONCEPTUAL OVERVIEW OF COST REPORT

The existing cost control system together with the associated project team structure and profit centre policy adopted by the local contractor are examined below :-

3.2 PROFIT CENTER POLICY :

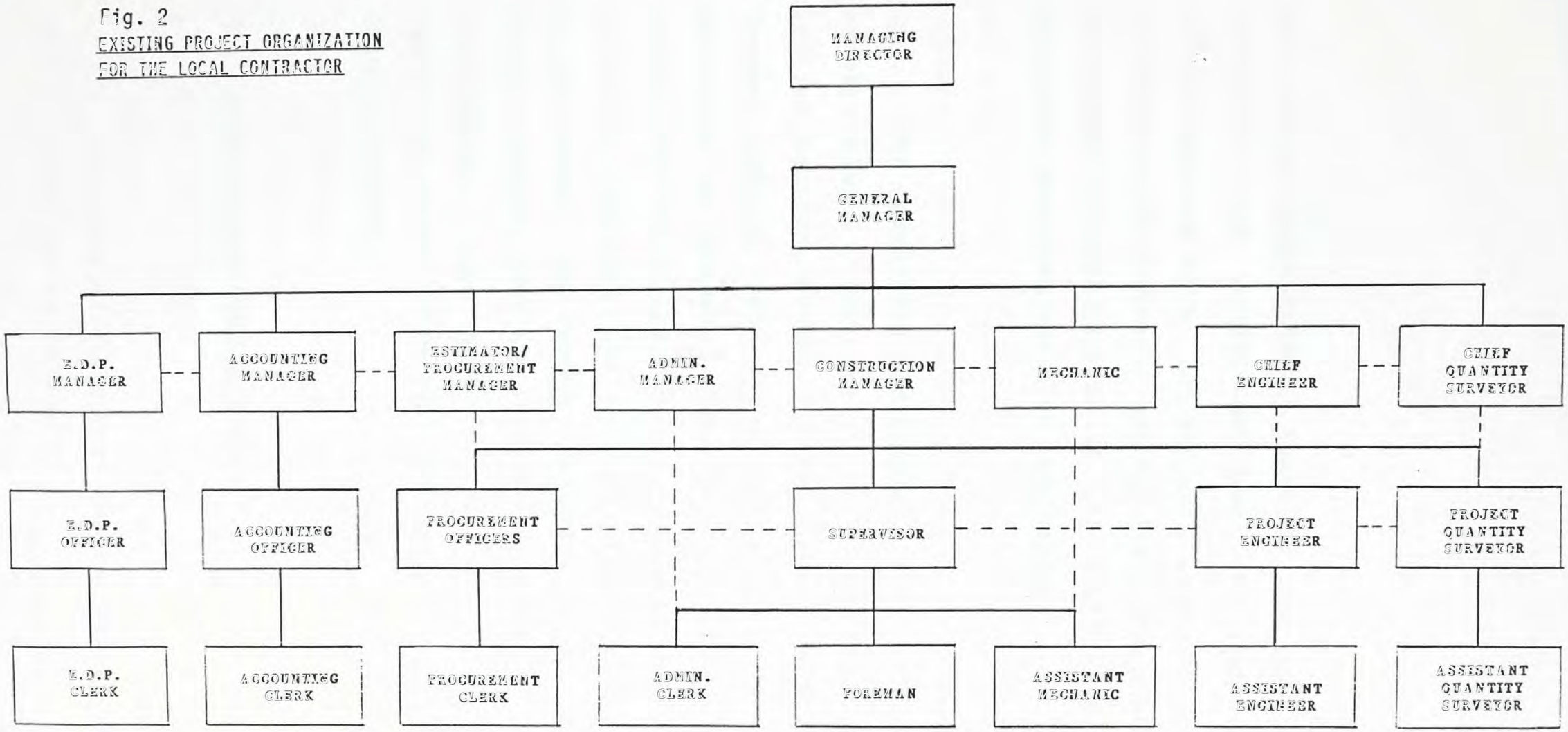
The local contractor adopted a profit centre policy for the assessment of the performance of its projects. Each project is treated as an individual cost/profit center. Except for overhead costs that cannot be identified for a particular project, all the job costs are charged specifically to each project. Overhead costs are costs incurred for services and materials that benefit more than one construction project and, therefore, will be allocated to each job by certain assigned proportion. Thus, individual job accounts for its own profit and lose and also its portion of company overheads, which include the general management's salary, and all head office expenses such as rents and utilities charges. In other words, each job is treated as a branch office of the local construction company, and all the head office based functional departments such as estimating, purchasing, transportation etc. become the back up departments for each project.

3.3 PROJECT TEAM STRUCTURE :

Together with the profit center accounting policy, the project team concept was adopted for the design of the team structure. When any particular project is awarded, a self-contained unit is set up and headed by a Project Manager for the implementation of the project. The Project Manager is given considerable authority over the project and may acquire resources both inside and outside the organization. All the personnel on the project are seconded from other departments and work under the direct supervision of the Project Manager in the course of the project. The Project Manager is responsible for the profit/lose of the project. The project organization chart is as shown in Fig. 2.

Such a project organization has the advantage of facilitating the development of project team spirit through the clear understanding of the single objective. Besides, having all the resources under the direct control of the Project Manager ensures the unity of command and thus the taking of efficient actions. The communication will also be more effective in a close unit team. However, the setting up of a new, highly visible temporary structure may upset

Fig. 2
EXISTING PROJECT ORGANIZATION
FOR THE LOCAL CONTRACTOR



LEGEND:

--------- Advisory Relationship
_____ Direct Supervision Relationship

the regular organization. There is also duplication of facilities and inefficient use of resources. Another serious problem with the project team concept is the question of job security, because the project team members are usually concerned about the continuity of their employment near completion of the project.

The successful implementation of the project team concept also relies heavily on the personality of the Project Manager because in the case of a weak Project Manager working with strong Departmental Managers, the structure may become a "matrix organization" where the middle level staffs are actually working for two bosses. In a conflict situation, the middle level staffs can be caught in the middle. The Project Manager will feel that he has little authority over the staff seconded from the Functional Departments, and on the other hand, the Functional Department Heads often feel that their territories are being interfered.

3.4 EXISTING COST CONTROL SYSTEM :

Under the existing cost control system, the three basic elements are as follows :-

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3.4.1 Establishment of Cost Budget

Under the existing cost control system, the tenders are prepared by the estimator based on the sub-contractors' prices. The works will be broken down into numerous trades and sub-contractors will be invited to submit bids for each subletted work. The sub-contractors' prices plus a mark up will then be used for the tendering.

3.4.2 Formulation of Cost Plan

After the tender is awarded, the existing system requires the Project Manager, who was not involved during tendering stage, to review the tender prices and establish a cost plan with the estimator. The estimator has to explain to the Project Manager every detail of the figures which make up the tender. The Project Manager not only has to know how the budget is established, but also to challenge the estimator should the budget be found not making adequate allowance in the tender. Since there are generally only a few days notice given from award of tender to job commencement, the Project Manager usually concentrates his effort in selecting site personnel, planning, and

negotiating sub-contractors and suppliers within this short period. Consequently, it is common that the Project Manager does not get a chance to review and discuss the budget with the estimator, but to rely on the estimator to prepare the cost plan.

It is very often under the existing system that until three to six months after the job started, the Project Manager, Estimator and Quality Surveyor come to an agreed cost plan. The agreed cost plan will then be submitted to and discussed with the general managers and senior management for approval. Provided that there is reasonable profit after deduction of all the budgeted costs from the foreseeable revenue, the cost plan will be approved by the senior management. Otherwise, the cost plan will be rejected and all three parties have to work together again for some cost saving exercises. It usually takes another two to three months before the first cost plan is finally approved by the senior management.

The approved cost plan acted as the target for every party and department to achieve. Under the project team and cost/profit center concept, the Project Manager will be the one responsible for the completion of the job within this

agreed budget. It also forms an informal agreement between the senior management and the Project Manager that project bonus will be given if substantial budget saving is achieved upon completion of the job. By this way, incentive is given to the Project Manager for cost saving in running projects.

3.4.3 Implementation of Cost Control :

The approved cost plan is passed to the Project Quantity Surveyor who is in charge of both payment to the sub-contractors and materials suppliers, and revenue received from the clients. Thereafter, a cost report will be issued periodically by the Accounting and Quantity Surveying Department jointly. The existing cost report reports the accumulated values of payment up to the issued date. In particular, the cost report shows the accumulated dollar value of cheques issued to each category of material suppliers, sub-contractors and other direct and indirect expenses, including part of the head office overheads.

3.5 DRAWBACKS OF EXISTING COST CONTROL SYSTEM :

The major drawback of the existing cost control system is that the cost data used in the preparation of the cost report are untimely. The cost report is supposed to provide updated cost data for comparison with the budgeted costs so that the management can screen out those items which have been overrun. However, the cost data are based on the payments to the suppliers and sub-contractors, which will only be processed after the return of the receipts and the matching with the corresponding invoices. Therefore, the cost information provided in the cost report reflect the financial status at least one month ago. This does not facilitate the taking of immediate remedial actions in cases of excessive wastage or budget overrun. In other words, the report is an accounting report rather than a cost control report.

Another deficiency of the existing system is the inaccuracy of the cost accounted for in the cost report. As discussed in section 2.1, the Project Manager's job is to manage the sub-contractors rather than the manpower and their productivity directly. Underpayment and overpayment is a very common and useful tool to control the

sub-contractors. If the sub-contractor has a strong bargaining power because of the speciality of his trade or large share of his works; the Project Manager may have to overpay the sub-contractor in order to motivate him to get the job completed. For a weak sub-contractor, who has only marginal financial backup, the Project Manager may underpay him so that he will endeavor to complete the job as soon as possible to get back all his payment. Thus, the expenses accounted for in the cost report, which are based on the payments to the sub-contractors, do not reflect the actual financial and progress status of the project and cause misinterpretation when comparing with the budget figures.

Furthermore, the cost report is prepared by head office accounting and quantity surveying staffs instead of site staffs. Since the head office staffs are not familiar with the actual site activities, the costs are sometimes allocated wrongly. For instance, an invoice from the timber supplier can be classified as material cost for falsework or for temporary site office. If it is the first case, the invoice should be entered into the falsework account, whereas for the second case, it should be entered into the site preliminary account. Unfamiliarity with the actual usage of the material and construction process will lead to wrong allocation of the cost, and thus hamper the accuracy of the cost report.

In addition, the time required to prepare the cost report under the current system is relatively long. Data are required to be input into a head office mainframe computer which takes care of thirty or more jobs at one time. Thus, even cost data are collected to reflect today's activities, it may take several days for the input of these data because of the long queue of jobs.

The project organization associated with the existing cost control system does not provide adequate balancing power to ensure proper performance of the cost control function. As mentioned, the estimator prepares the tender bid, and the Project Manager usually has to rely on him to formulate the cost plan after award of the tender. However, the reliance on the estimator, who is also the Procurement Manager, may create a conflict of interest in such situation. In some cases, the estimator found that he had not allowed enough budget for one trade and, therefore, sublletted only a portion of the work and left the minor portion either undeclared or mixed with other figures in the budget. Later, when this minor portion of work was found not included in the sub-contract, the estimator said that it had been either allowed in other budget or included in the preliminaries, which were the works to be performed directly by the main contractor's direct labour.

Consequently, budget overrun was surfaced only at a late stage of the project.

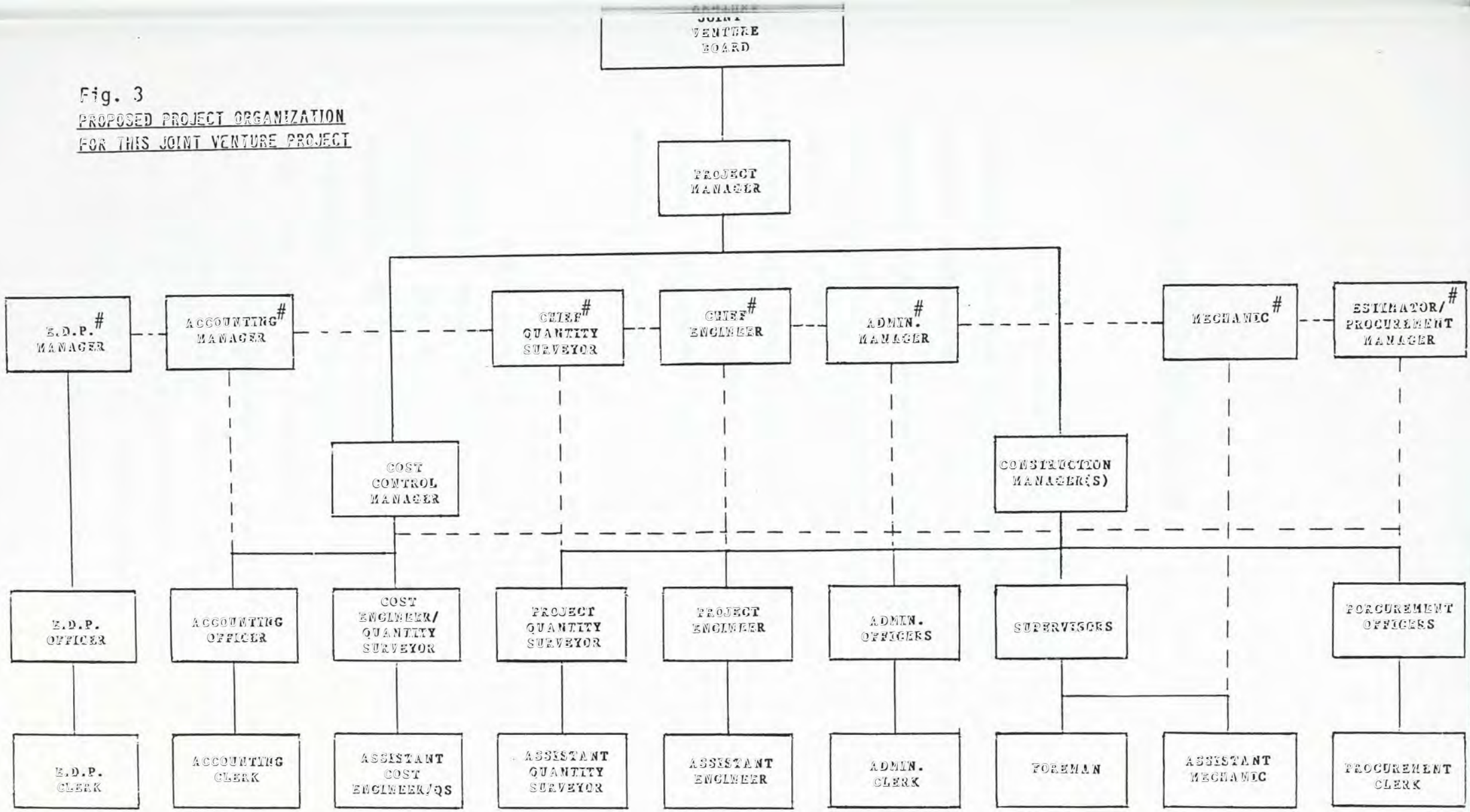
CHAPTER IV

THE NEW SITE COST CONTROL SYSTEM

4.1 Project Organization

For this joint venture project, the policy of a seperate profit center and project team was continuously adopted. Other than the accounting and purchasing functions to be performed by the head office, all other required functional staffs were seconded from each Company to form a site based team and worked under the Project Manager assigned by the Managing Board formed by the two companies' Managing Directors and General Managers. The Project Manager was responsible for the project and reported to the Managing Board. Furthermore, a new site cost control system was implemented particularly for this project with a view to overcome the problems previously experienced. To facilitate such a system, a new post of Cost Control Manager was included in the project team. The project organization chart is as shown in Fig. 3.

Fig. 3
PROPOSED PROJECT ORGANIZATION
FOR THIS JOINT VENTURE PROJECT



LEGEND:

------- Advisory Relationship

_____ Direct Supervision Relationship

#Note: Under Direct Supervision of the local Contractor's General Manager

*NOTE : JOINT VENTURE BOARD MEMBERS INCLUDING MANAGING DIRECTORS AND GENERAL MANAGERS FROM BOTH COMPANIES.

4.2 SITE COST CONTROL SYSTEM :

In this new site cost control system, the relationship among planning, programming and cost control is heavily emphasized. In the previous system, the progress is measured against network or bar chart activities, and the costs incurred are measured against materials supplied, labour employed and payments to sub-contractors. The progress and costs thus measured are not directly related. Under the new system, construction programme and cost plan matched completely so as to facilitate control over both progress and cost.

Same as before, after the job was awarded, budget was broken down in relation with the network programme to establish the cost plan. Under the new system, the breakdown of the budget and network activities are more systematic. Firstly, activities that are assigned as a cost item must be the same activities as appeared on the construction programme. Secondly, the size of each activity is so chosen that it can be easily and quickly measured and verified in terms of percentage of completion. Furthermore, the preparation of the weekly returns of the expenditure and percentage of completion must require minimal site effort

and time. The cost control report contains the following information :-

a. Costs spent on any activity or group of activities
b. Percentage completion of any activity or group activities
c. Whether these costs spent were justified or excessive
d. Overall percentage completion of the project as at the reported date
e. Total cost incurred as at the reported date
f. Efficiency of site operations
g. Estimated total cost required to complete the remaining job
h. Approximate date of completion of the project
i. Relationship between progress and programme

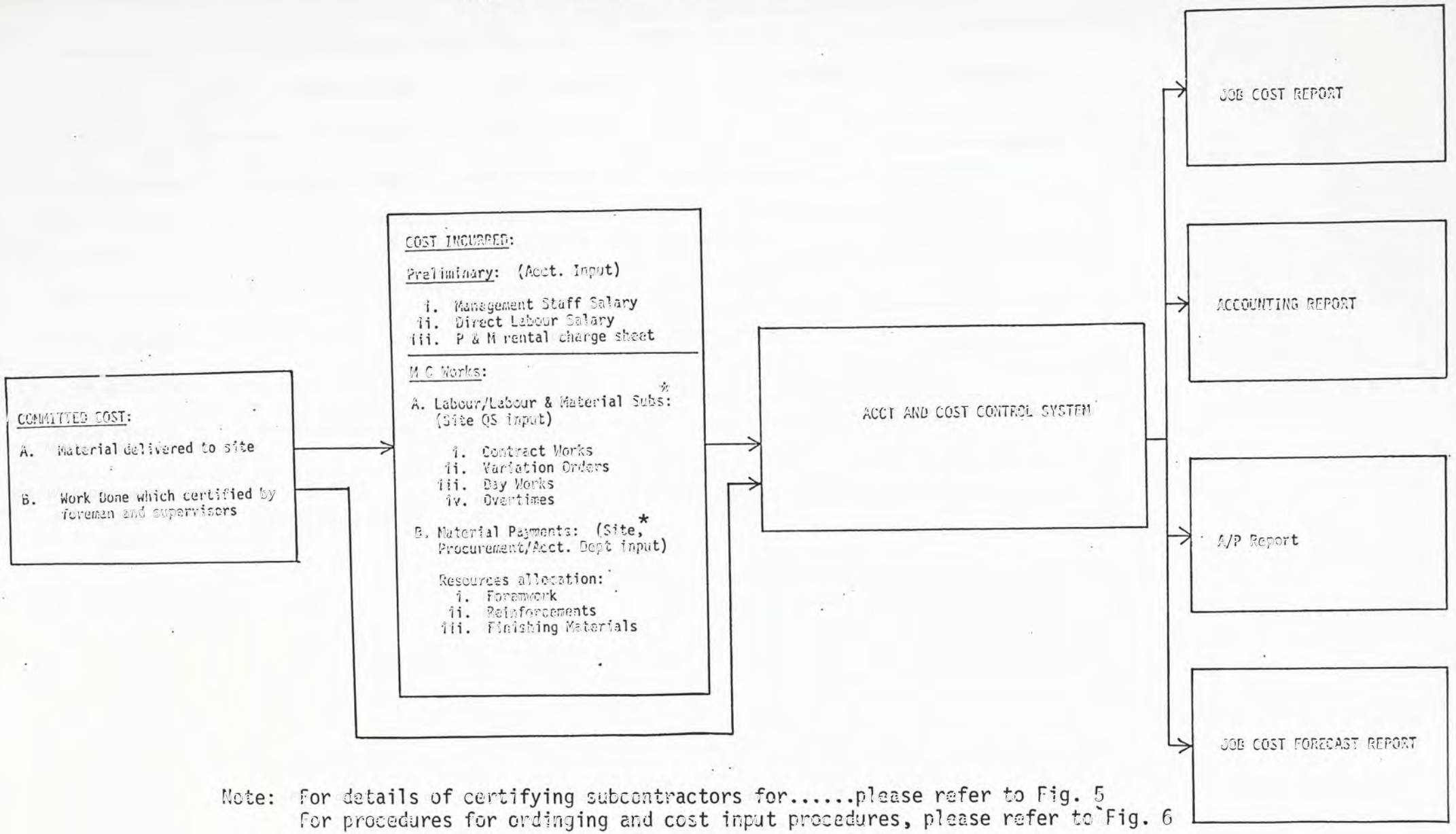
In other words, the new cost control report is a set of measurements of activities. The report also provides a comparison of the budgets with the actual results at certain stage of percentage completion. The deviation of the actual results from the original budget is called variance.

In case of any negative variances, construction managers or supervisors are required to provide a satisfactory explanation by the Cost Control Manager or the senior management.

Therefore, the variances help "management by exception", which guide the Project Manager and senior management to concentrate their effort on problematic areas. Furthermore, by comparison of the budget with the actual results, managers are reminded to revise the plan or target date, to search for alternative construction methods and to forecast future cost and cash required to meet the target. The report also provides a better means of measuring performance and rewards.

The new site cost control system requires the collection of timely and accurate data on actual progress and cost incurred, and thus demands more reliance on field personnel's input. Field personnel are required to provide information on the receipt of construction material, the construction labour working hours, the activities to which those hours apply, and the percentage completion of each activity as indicated in Fig. 4 and 5. Thus, effective and efficient communication between cost control staff and

Fig. 4 COST CONTROL SYSTEM OVERVIEW



Note: For details of certifying subcontractors for.....please refer to Fig. 5
For procedures for ordinging and cost input procedures, please refer to Fig. 6

	ORIGINAL DOCUMENT	SUPPORTING DOCUMENT	BILL DOCUMENT	APPROVED BY
o Subcontractors	subcontract document	work certificate *	pay application **	Construction Manager Supervisors Foreman
o Material	material requsit & purchase order	delivery note *	invoice **	Supervisors Site Clerk
o Direct labour	N.A.	time card *	cost ledger from Local Contractor **	Supervisors Foreman Site Clerk
o Day workers	verbal by supervisors	work certificate *	pay application **	Supervisors Foreman Site Clerk
o Equipment : - inside - outside	verbal by supervisors	time sheet work certificate *	P&M Rental charge Sheet ** invoice **	Supervisor Foreman Construction Managers
o Salary labour (1) Local Contractor			cost ledger list of staff included in billing and % of month charged to be shown **	PM
Foreign Contractor			invoice **	PM

* Committed Cost input document
** Actual Cost incur document

field personnel is essential for the success of the new system.

4.3 EXPECTED OUTCOMES OF NEW SITE COST CONTROL SYSTEM :

The implementation of the new site cost control system is aimed at the production of a timely and accurate cost control report to assist the Project Manager in planning and controlling the site operations.

Firstly, by stationing the cost control team on site particularly for this project, the time required for the preparation of the cost report is expected to be shortened. Not only the long communication time between site office and head office is avoided, but also first hand and instant daily input can be entered into the site computer system. Cost control report generated can also be tailor made to suit the project, such that the unique feature of the project can be reflected. Furthermore, the site based cost control staffs are expected to be more sensible and clear about the project and the related scope of works. Thus, the possibility of categorizing the input data wrongly can be reduced.

Secondly, the Site Cost Control System is expected to create an atmosphere of consciousness over cost and progress such that engineers, supervisors and foremen are more alert to material wastage and value engineering. Estimators or procurement officers will also endeavor to identify sub-conbtractor's scope of works and specifications more clearly, and look for more good quality alternative material suppliers for cost saving exercises.

From the revenue side, more close monitoring of payment application to the client is anticipated to be achieved under the new system. Since for every dollar which the project expended, there should be a corresponding revenue covered from the client. This is specially important for fast track construction projects in which numerous variation orders are issued by the Architect due to design changes. Consequently, negative cash flow can be minimized as much as possible. As a result, more profit and bonus are expected to be generated by introducing this new Site Cost Control System.

CHAPTER V

IMPLEMENTATION PROCESS AND

RESISTANCES OBSERVED

The drawbacks and deficiencies of the previous cost control system were known to the top management of the local contractor for some time, but no action was taken to improve in the first two joint venture projects. The precipitating event that led to the implementation of the new site cost control system is the tendering for the third joint venture project. In the tender negotiation stage, the new system was used as a marketing tool and a timely cost report was promised to be submitted to the client so that the client would be aware of the most updated cost figures and progress for the project. It was also considered that a timely cost control report would be useful to the senior management for internal control of the joint venture project for the purpose of performance appraisal and cost monitoring. Besides, by issuing such detailed cost control report, financial status of this project would be fairly open and

exposed to both parties. The historical unit cost data could be used for bidding of future similar projects. Thus, after the award of the tender, the joint venture implemented the new system.

5.1 IMPLEMENTATION PROCESS :

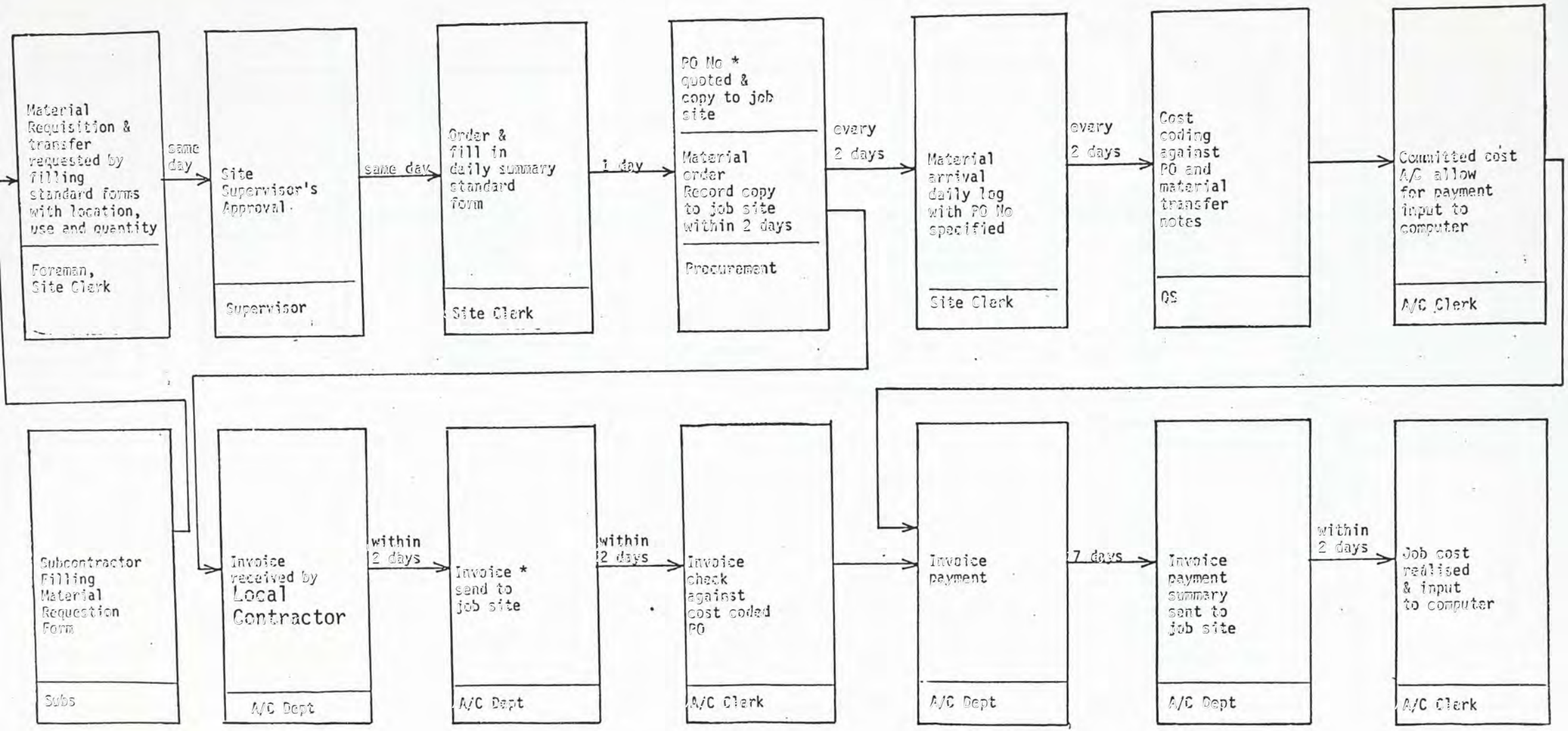
After the project was awarded, the senior staffs, including the General Manager and the Managing Director, of the local contractor visited the foreign contractor's head office to study the new Site Cost Control system as suggested to the client at tender stage. During the five day trip in United States, a brief description and introduction of the new system was given to the seniors. After the visit, it was agreed in principle that a similar set up would be arranged for the joint venture project. Initially, the new system would be implemented in parallel with the existing system and later completely adopted into a single system after the new system was smoothly implemented. Preliminary set up and personnel involved were also basically agreed and a few key personnels, i.e. Cost Control Manager and Engineers, would be seconded from United States head office to Hong Kong for this project.

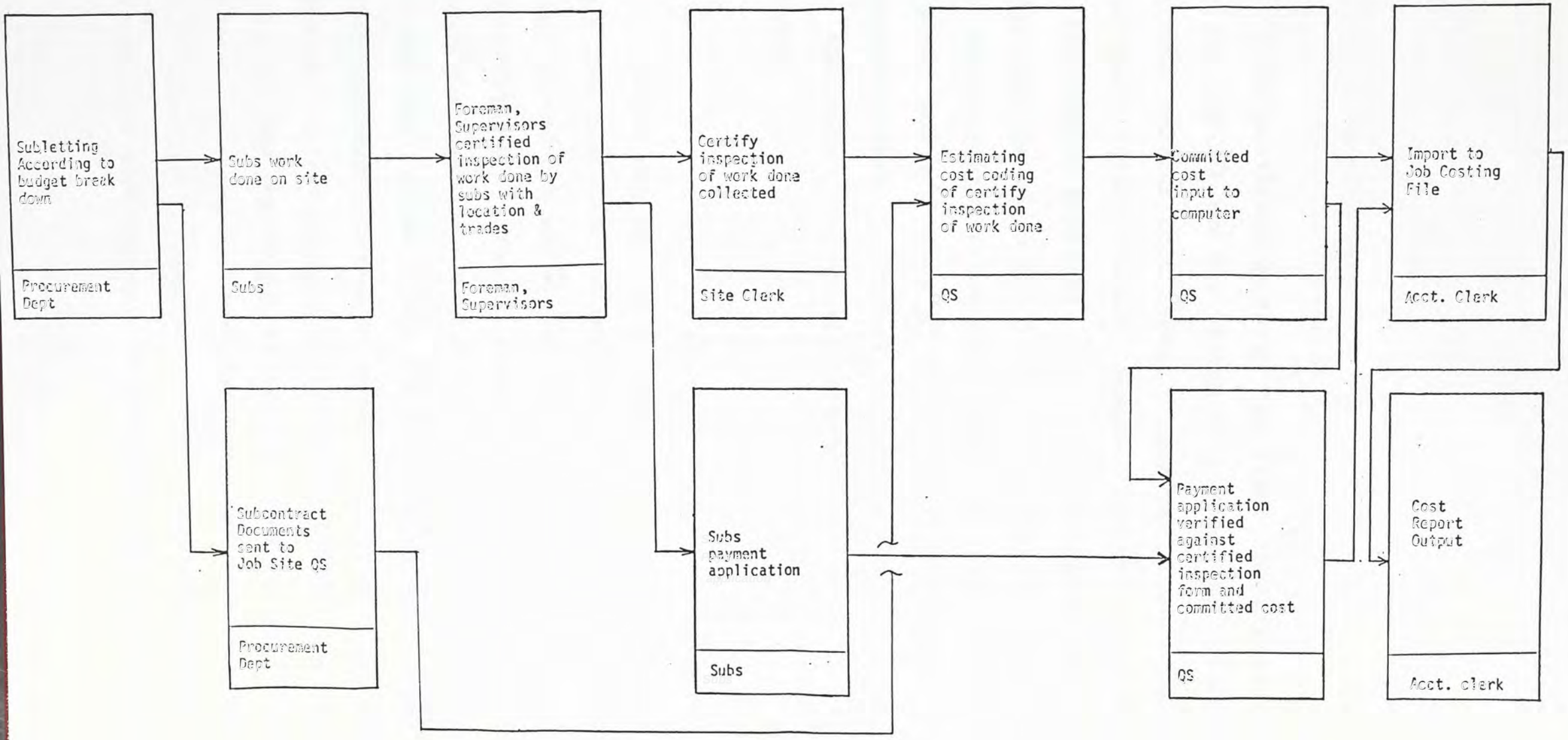
However, after a detailed review of the tendered budget, there was not enough overhead allowed in the preliminaries for the employment of two to three more expatriates to work on this project. Therefore, it was compromised that the experts would visit Hong Kong for a week to start up the control team with local staffs. Subsequently, the experts visited Hong Kong after one month of the job started.

In the first three days of the visit, the experts spent with the local company to get familiar with the local system and investigate how it could be modified to cope with the new system. Finally, procedures and information flow of the new system were agreed as shown on the procedure flow charts in Fig. 6 and Fig. 7.

At the later section of the visit, the experts trained totally five local staffs with the theories and operations of the new system including the set up and usage of the computer hardware and software. However, because of the delay in computer hardward delivery, the proposed three day training and demonstration were shortened to one day demonstration. Thereafter, the communications between Hong Kong and the United States on any problems were through long distance calls and facsimiled transmissions.

Fig. 6 MATERIAL ORDERING AND COST INPUT PROCEDURES




Subletting According to budget break down
Procurement Dept
Subs work done on site
Subs
Foreman, Supervisors certified inspection of work done by subs with location & trades
Foreman, Supervisors
Certify inspection of work done collected
Site Clerk
Estimating cost coding of certify inspection of work done
QS
Committed cost input to computer
QS
Import to Job Costing File
Acct. Clerk
Subcontract Documents sent to Job Site QS
Procurement Dept
Subs payment application
Subs
Payment application verified against certified inspection form and committed cost
QS
Cost Report Output
Acct. clerk

As mentioned before, the first thing required for the set up of the new system is to have the budget broken down into various cost items. However, because the making up of the original tender budget by the local company and the budget breakdown required under New Cost Control System were based on two different approaches, it took more than three months before the budget could be input into the computer while it was still yet to be approved by the Management Board. It was not until almost one year later that the budget was finally approved and used for control purposes.

After the experts returned to the United States, the newly assigned Cost Control Manager tried to organize the formal procedures and arrange forms for data input. However, the traditionally trained local quantity surveyors were not co-operated and gave low priority to the collection of data for the new system. The Cost Control Manager adopted a softer approach, instead of a strong opposition and hostile approach. Introduction course and training course were given to the quantity surveyors through meetings and informal discussions. Meetings were also held with the cost data collection staffs, including site clerks, site foremen and supervisors, to introduce the new system.

After a few months of the implementation, three out of the five originally trained cost control staffs resigned from the project because of shortage of qualified staffs in the industry and higher paid given by other companies. Thus, new staffs had to be recruited externally. In order to keep the momentum of the new system implementation, quantity surveyors and engineers were seconded from other divisions to the cost control team on a temporary basis. By this job rotation, the quantity surveyors and engineers were enriched with more sense of the new system and later did help the implementation process more smoothly.

5.2 DIFFICULTIES ENCOUNTERED :

After implementation of the new cost control system in parallel with the existing system, several difficulties were encountered in the collection of the more timely and detailed cost data for the preparation of the cost control report.

Firstly, the new system is designed to be a decentralized system, ie, with a cost control team deployed

at site to collect and process relevant cost data. However, because of the complexity and large amount of manpower required, some of the cost information have to be supplied by the Head Office from the existing system. For instance, material accruals may take three forms :

a. materials and their invoices already received;
b. materials received but not their invoices, or
c. invoices received but not the materials

It required vast amount of manpower to record this data in various material accrual journals, and these journals were thus prepared by the head office Accounting Department. Because of such reliance on the head office, the site cost control team found difficulties in controlling the timing and accuracy of these cost data. Delay in the supply and inaccuracy of the cost information from the head office were frequently experienced.

Under the new system, the field personnel, ie. the foremen and supervisors, played an important role in the provision of useful information, such as the receipt of materials delivered direct to site, the amount and location of works done by sub-contractors and direct labour, the

man-hours of direct labour incurred in certain items of works etc. However, the field personnel were used to concentrate mainly on completion of the jobs within time and with acceptable workmanship, but not on the cost aspect. They had not receive any training on cost control and placed low priority on this additional duty. Thus, the new cost control team faced another difficulty of how to train and motivate the field personnel.

5.3 RESISTANCE OBSERVED :

Facing the above difficulties, the site cost control team encountered resistance, instead of support and co-operation, from other project team members to the overcoming of these difficulties and to the implementation of the new system.

One source of resistance is from the Estimator. The cost control system required the establishment of a cost plan at the very beginning of the project to serve as a yardstick. However, despite numerous urges from the cost control team, the Estimator processed very slowly the

breaking down of the cost budget and the formulation of the cost plan. As a result, there was no cost budget or cost plan ever approved until long time after the new system was implemented.

Another source of resistance is from the Accounting Department in the Head Office of the local contractor. As mentioned earlier, some cost data such as material invoices and purchase orders were to be provided by the Accounting Department. However, under the existing system of the local contractor, the cost data of all projects was complied into one single computer report and invoice and material orders were gathered with other projects. Due to the confidentiality of these cost data, the local company head office staffs were reluctant to release it to third party, i.e. the foreign contractor. Subsequently, the cost information for the joint venture project was only provided after a separation process was carried out. Since the information was difficult to seperate project by project, the information was sent to job site at least two to three months after transactions.

The main purpose of the cost control report was to provide useful information to the team members on the

financial status of the project and to facilitate the taking of timely actions to rectify any sources of excessive wastage and inefficient construction methods. However, some of the Construction Managers and Quantity Surveyors exhibited great resistance to the use of the new site cost control report for such purpose. Regular meetings were held among the Construction Managers, Cost Control Manager and Quantity Surveyors to discuss the information revealed in the cost control report. These meetings usually ended in arguments over the accuracy of the cost report instead of with an identification of the sources of cost ineffectiveness. The parallel running of the new and existing cost control system had made the situation even worst. Under the existing system, the Quantity Surveyors calculated the work done today according to payments to sub-contractors, material supplied today and sub-contractor's liabilities, which might be misleading due to overpayment and underpayment, whereas the new system calculated the work done today based on various engineering estimates of the physical work done. Because of the difference in the approach, discrepancies of the two cost reports were a constant source of conflict between the site cost control team and the site project quantity surveyors.

After a lot of persuasions and negotiations, both at low level and high level, the first cost control report was struggled from these difficulties and resistances and issued three months after the reported period. Thereafter, for every data to be collected for the following reports, co-operation and co-ordination were continuously requested from all site staff. In comparison with the original target of having the cost report completed and issued within one week after the month ended, three month preparation period were found totally unacceptable. The cost report under the new system, again, was reporting historical information instead of updated useful control information.

CHAPTER VI

THEORETICAL CONSIDERATIONS AND SETTING OF QUESTIONNAIRES

6.1 THEORETICAL CONSIDERATIONS :

The new site cost control system is supposed to facilitate more effective control of the project, thus increasing profit to the company and bonus to the project team members. Then why the resistances as mentioned in the previous chapter occur ?

In today's dynamic environment, changes are inevitable in organizations. One of the most baffling and recalcitrant of the problem is employee's resistance to change. Such resistance may take a number of forms - unwilling to co-operate with change, persistent reduction in output, increase in the number of quits and requests for transfer, chronic quarrels, and the expression of a lot of pseudological reasons why the change will not work. All too

often when such resistance to change is encountered, it is explained by quoting the cliche that "people resist change" and not analyzed further.

6.2 FRAMEWORK OF ANALYSE

Actually, the topic of resistance to change has been addressed in most of the textbooks and literatures on organization development and numerous explanations are offered. In order to provide a simple-to-use framework for analyzing resistance to change in this case, the framework as suggested by Paul R. Lawrence is adopted with further elaboration.

Lawrence asserted that what people resist is not technical innovation in their works but social change - the change in their human relationships that generally accompanies with technical change. Lawrence defined that "the social aspect of the change refers to the way those affected by it think it will alter their established relationships in the organization". The following framework is thus suggested to analyse resistance to change and will be applied to the case :-

The people affected by the change are divided into several interest groups. The members within an interest group are to have common characteristics such as same profession, values and role. How the established relationships among the interest groups are being altered in the change and how the interest groups perceive such an alteration are to be analyzed. Resistance to change will be exhibited in those interest groups which perceive the alteration as a threat to their status quo. The threat may be due to :

a. povrochial self-interest;
b. lack of understanding and trust;
c. different appraisal aspect and perception; or
d. low tolerance for change

6.3 INTEREST GROUPS CATEGORY

To apply this framework in analysis of this case, the interest groups need to be identified. Referring to the project team organization charts under the existing and new cost control systems as shown in Fig. 2 and 3, six interest groups are identified :

General Manager,

Construction Managers,

Quantity Surveyors,

Accountants,

Project Manager and

Cost Control Engineers / Managers

The latter two groups are newly introduced in the new cost control system. Each interest group is distinctively having its own professional background and performing a specific role in the project. This case is further complicated by the fact that the new cost control system is implemented in a joint venture project. The Project Manager is from the foreign contractor and the Cost Control Engineers are led by the Cost Control Manager from the foreign contractor. The structural relationships among these interest groups before and after the change are diagrammatically shown in Fig. 8 and Fig. 9.

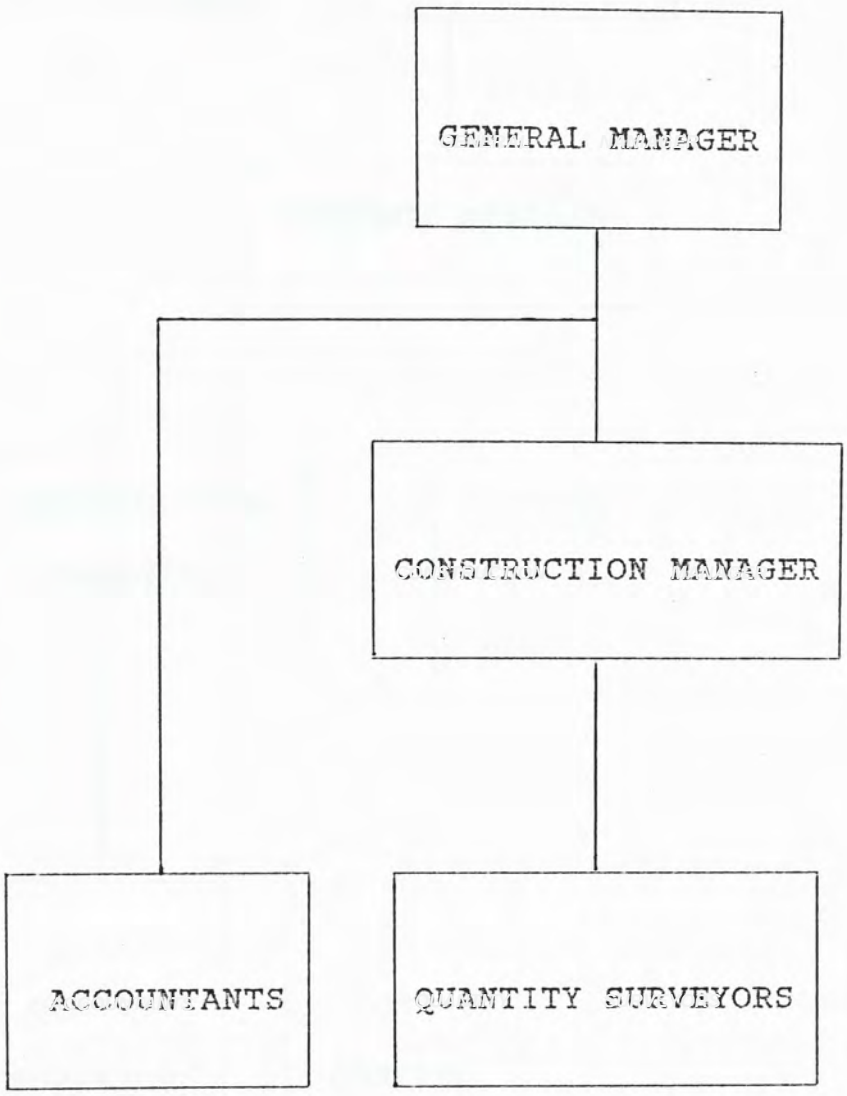


FIG. [8] STRUCTURAL RELATIONSHIPS UNDER THE EXISTING DEPARTMENTAL COST CONTROL SYSTEM

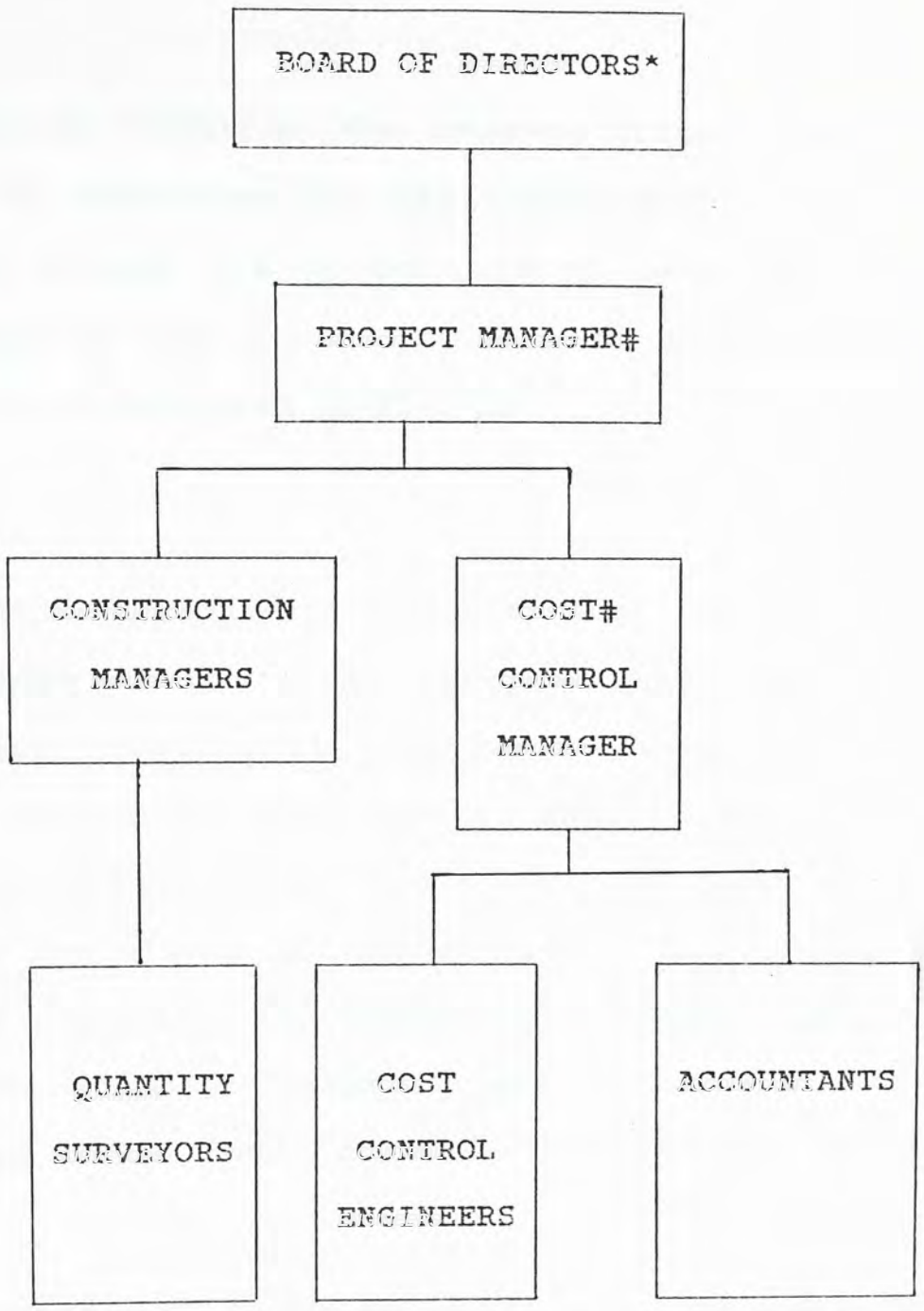


FIG. [9] STRUCTURAL RELATIONSHIP UNDER THE NEW SITE COST CONTROL SYSTEM

Notes: *General Manager of the local contractor is one of the Directors in the Board
#From foreign contractor

Having identified the interest groups, the analysis proceeds to examining how the established relationships among the groups are being altered, and the possible perceptions of the groups on such an alteration. The analysis is as tabulated in Fig. 10.

The above analysis indicates that the perception of an individual or interest group on the change of the established relationship may be positive or negative. Positive perception will lead to active involvement and supportive participation, while negative perception will result in resistance to the change. Thus, in order to facilitate successful implementation of change, the analysis needs to go further to identify what factors influence the perception of an individual or interest groups on the change.

6.4 KEY ISSUES FOR INVESTIGATION :

To investigate the factors affecting the perception of the new relationship, a review of literature on change management is carried out and the following key issues are identified for detailed investigation :

Fig. 10 Possile Perceptions of Different Interest Groups on the Change

Interest Group	Change in Established Relationship	Possible Positive Perception of Such Change	Possible Negative Perception of Such Change
GENERAL MANAGER	a. full command of the project in existing system, b. group decision-making required in new system	a. a good opportunity to absorb foreign contractor's expertise in project management	a. interference from foreign contractor in decision making b. losing valuable cost information to foreign contractor
CONSTRUCTION MANAGER	a. performing cost control function with input from his subordinate Quantity Surveyors in existing system b. working with Cost Manager in new system	a. more efficient and effective cost control input from Cost Manager, thus reducing wastage and increasing profit	a. lack of trust from top management b. interference from Cost Manager in decision making c. performance being closely monitored and reported by Cost Manager
QUANTITY SURVEYORS	a. responsible for the preparation of cost control reports in existing system b. cost control function being limited to collection and passing of cost data to cost control team	a. division of labour in new system, thus increasing the efficiency	a. previous effort in cost control not endorsed by top management b. ability in cost control not fully utilized in new system c. self-importance to the project being reduced d. the new system involves too many parties, requires too many cost data and will not work

Fig. 10 Possile Perceptions of Different Interest Groups on the Change

Interest Group	Change in Established Relationship	Possible Positive Perception of Such Change	Possible Negative Perception of Such Change
ACCOUNTANT	a. performing cost accounting in head office under existing system	a. close to the works area, thus realizing the actual activities rather than just in paper	a. working in site is like an exile from the head office
	b. placing in site under the Cost Manager in new system	b. team work with Cost Engineers, thus more efficient	b. working under a new boss of different discipline may be problematic
			c. the new cost system may be difficult to pick up
COST ENGINEERS	a. being Quantity Surveyors in existing system	a. cost control ability more fully utilized in new system	a. working under a new boss may be problematic
	b. now being transferred to work under Cost Manager in new system		b. the new cost system may be difficult to pick up
			c. lack of unity of command from department head and new boss

a. the implementation process;

b. the work team relationship;

c. the senior's influence;

d. job satisfaction; and

e. employee's perception of the role of cost control

As the number of project team members involved in the cost control function is about fifteen, an efficient and effective way of understanding their views on the new system and the above issues is personal interview, which will also provide the flexibility of pursuing a deeper understanding of the individual's feeling on specific issues. However, since one of the authors was involved in this project and is working for the foreign contractor, the openness of the team members in being interviewed by someone they know is of doubt. Thus, the survey method of questionnaire is adopted.

6.5 SETTING OF QUESTIONNAIRE :

The sample questionnaire is attached in Appendix I. The objective of the questionnaire is to find out the employee's own evaluation of the new site cost control

system and the views on the above issues, so as to reveal any correlation between them. The questionnaire consists of 2 parts : part 1 is to explore the employee's views on the existing departmental cost control system, and part 2 is a duplication of the questions in part 1 but on the new site cost control system and with additional questions on the training programme for the new system. Data to be collected in the questionnaire are as listed below :-

QUESTION NO.	DATA TO BE COLLECTED
PART 1	
1, 2.1 & 2.2	the interest group to which the respondent belongs to
2.3.1 to 2.3.4	the respondent's evaluation of the existing departmental cost control system
2.3.5 & 2.3.7	the respondent's views on the project team relationship
2.3.6	the respondent's understanding of the importance of the cost report to his senior

2.4 to 2.7	the respondent's perception of the role of cost control
2.8	the respondent's view on whether his ability being fully utilized

Part 2

1 to 2.8	same data to be collected as in Part 1 but related to the new site cost control system
3 & 4	respondent's views on the training course organized for the new system
5	workload of the respondent under the new system

CHAPTER VII

FINDINGS FROM QUESTIONNAIRE AND MICRO-POLITICS MODEL

7.1 RESPONSE FROM QUESTIONNAIRES :

The questionnaires were sent out to thirteen project team members and all were returned. The ratings given by the respondents to each of the questions are tabulated in Appendix II.

The members' evaluation of the existing departmental cost control system and the new site cost control system in terms of usefulness, timeliness and adequacy of the cost control report is as follows:-

a. 3 members (consisting of 1 Construction Manager, 1 Quantity Surveyor and 1 Accountant) consider that the existing system is better;

b. 5 members (consisting of 1 Construction Manager, 3 Quantity Surveyors and 1 Cost Control Engineer) have no particular preference on either of the system; and

c. 5 members (consisting of 2 Quantity Surveyors, 2 Cost Control Engineers and 1 Accountant) consider that the new system is better.

The response indicates that the views within an interest group vary substantially and there is no signs of a particular dominant attitude in each group. The explanation may be that the project team was newly formed with members taken from various existing departments and projects, thus the personal characteristics are dominant over the group norm. Therefore, instead of analyzing the attitudes of each interest group, the analysis concentrates on comparing the attitudes of the following groups :-

a. Group 1 - Those who consider the existing system is better;

b. Group 2 - Those who have no particular preference on either; and

c. Group 3 - Those who consider the new system is better

7.2 ANALYSIS OF RESPONSE

The comparison of the response of these groups to the questionnaire is tabulated in Appendix III. For Group 1, the tabulation reveals that it exhibits the following significantly different attitudes from other groups :-

a. Most respondents consider that the project team becomes less co-operative after the change;

b. The cost report is viewed as less or of same importance to their senior in assessing their performance after the change;

c. Their cost control abilities are either less fully utilized or of same utilization after the change.

For Group 3, the attitudes are much different from Group 1 and as follows :-

a. 60% of the members consider that there is an increase in project team co-operation after the change;

b. none views the cost report as less important to their senior in assessing their performance after the change; and

c. 60% of the members consider that their cost control abilities are more fully utilized, and none views their abilities as less fully utilized after the change.

There is no significant difference in attitudes of these two groups on the extent of interference of others on their decision making and on the extent of their cost control function being perceived as conflict creation under both systems.

Regarding Group 2, their attitudes on various issues remain basically the same before and after the change. Actually, three out of the five members in this group have given exactly the same ratings to the questions in Part 1 and Part 2 of the questionnaire. The honesty of their response is of doubt. Such an uncooperative act may be explained by their response to question 2.8 ; all three

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respondents, who gave exactly the same response to both parts of the questionnaire, considered their abilities as not fully utilized under both the existing and the new system. This implies that they are dissatisfied with their present job.

Concerning the training course organized for the new cost control system, only five out of the thirteen respondents attended the course. The overall rating reveals that the training course failed in convincing them that the new site cost control system is better than the existing system, and in clarifying their role in the new system.

All the Quantity Surveyors, Cost Control Engineers and Accountants gave average or below average rating to the question of how well their abilities are being utilized under the existing cost control system. Thus, the change to the new system was actually introduced to a group that was already suffering some morale problems.

7.3 Micro-Politics

The data obtained from the questionnaires reveal a strange phenomenon that although the change to the new system was initiated from the top, most of the project team members did not perceive the cost control report as of greater importance to the management. This will be analysed under the context of micro-politics.

A useful model of the antecedents and conditions for power is given on Pfeffer's book, Power in Organizations, and is as shown in Fig. 11.

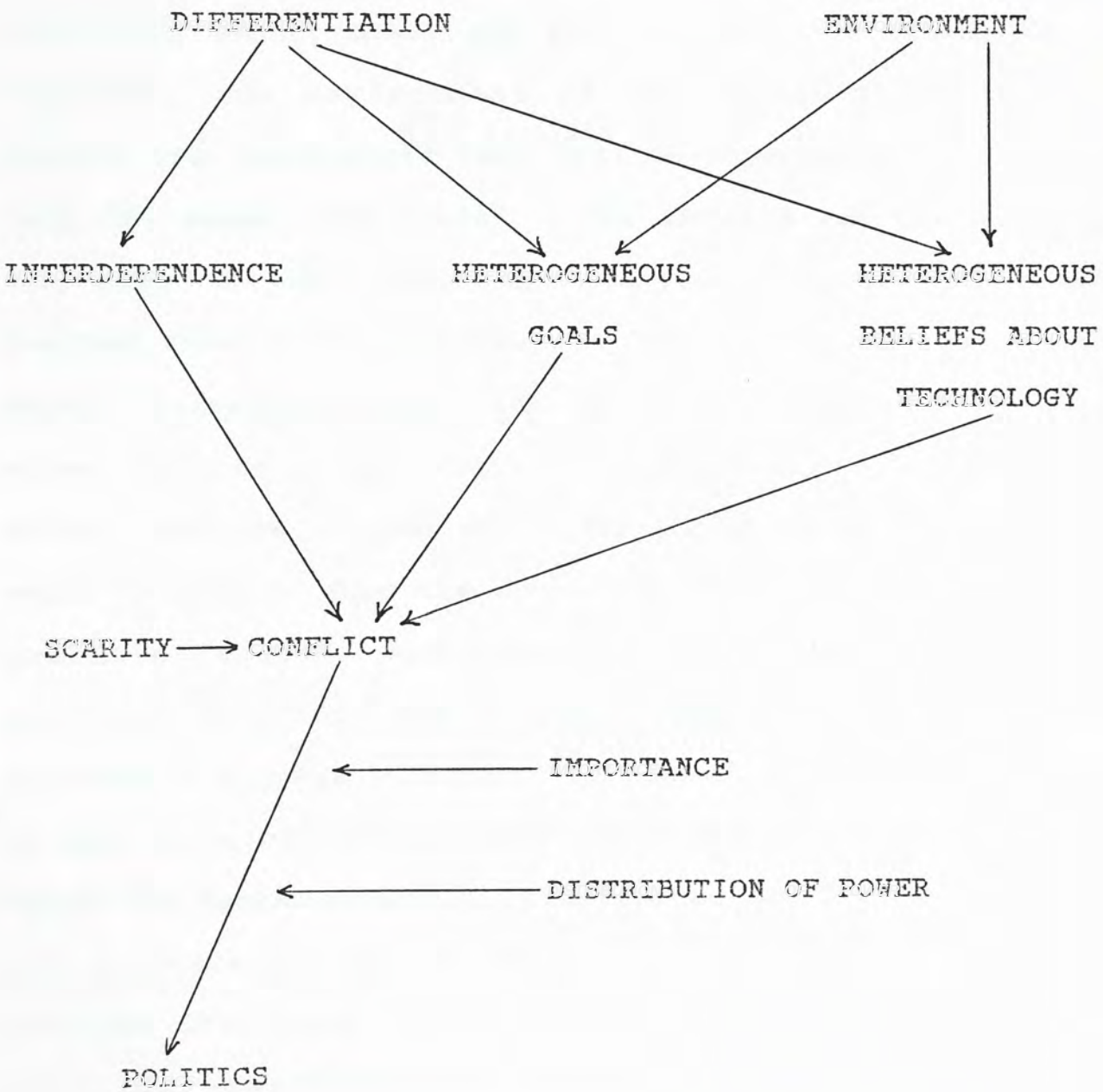

FIG. [11] POWER IN ORGANIZATION (FROM PFEFFER)

In this model, political activities are seen to be the outcome of a number of conditions. When these conditions exist, power and politics result. According to Pfeffer, the environment of the organization imposes demands and constraints that will be accommodated to in the form of "means' and "ends". The three primary conditions that give rise to conflict are scarity (there are not enough desired resources to allow all parties to have all they want), interdependence (the parties are related to each other in such a way that the distribution of resources affect everyone in some way), and incompatible goals and/or means to goal. When these conditions exist, conflict is a probable result. And when conflict exists, power and political behaviour are a likely result if two additional features are present. The first feature is the importance of the decision issue or the resources. In situations in which the decision may be perceived as less critical, power and politics may not be employed to resolve the decision because the issue is too trival to the investment of political resources and effort. The second is the distribution of power. Political activity, bargaining, and coalition formation occur primarily when power is dispensed. When power is highly centralized, the centralized authority makes decisions using its own rules and values. Thus, the political contests that sometimes occur in organizations take place only because there is some dispension of power and authority on the social system.

The micro-politics in the case results mainly from the joint venture. From the organization chart given in Fig. 9, it can be seen that the General Manager, Construction Managers and Quantity Surveyors are from the local contractor while the Project Manager and Cost Control Manager are from the foreign contractor. Applying the above model to the case, the conditions leading to political activities are as analysed below :-

1. Goals -

The local contractor and the foreign contractor have the common goal of completing the project with profit.

However, the foreign contractor also aims at gathering more local cost data and information about local suppliers and sub-contractors, whereas the local contractor tries to prevent his cost information from being disclosed. Thus, there are heterogeneous goals of the two parties.

2. Beliefs About Technology -

Despite both parties believe in exercising cost control to achieve the goal of completing the project within

budget, the views on the means to carry out cost control are different. The General Manager of the local contractor was the one who established the existing cost control system. He did not believe that the new system was applicable under Hong Kong conditions and had never been fully convinced by the senior management that the new system would be better than the existing system. The psychological factor of favoring his own 'baby' rather than accepting something not established by himself also played a significant role in his belief. On the other hand, the foreign contractor was so used to the new system that they believed it as the most efficient and effective system and applicable to Hong Kong. Thus, the beliefs about technology are different.

3. Interdependence -

The staffs from the two contractors were actually working on the same team, and therefore, there is great interdependence between them.

4. Scarity -

Both the new and the existing cost control systems were run parallel, and there was limited number of cost control staffs. Therefore, the competition for the scarce manpower resource was great.

Thus, the examination of these four conditions reveals that conflicts are deemed to exist between the two parties. Regarding the two features determining whether power will be used to resolve the conflicts, the analysis is as follows :-

1. Importance of the Issue -

The cost control system is very important to the management of the project.

2. Dispension of Power -

Since this is a joint venture project, the Project Manager is supposed to be the project leader and not working under the General Manager. However, other project team members such as Quantity Surveyors and Construction Managers are not only working under the

Project Manager, but also have to report to the Department Heads under the General Manager. Thus, there is great dispension of power.

Therefore, based on this model, substantial political activities would occur in the joint venture project team. Actually, the observation did concur with this. After the new system was implemented, the Cost Control Manager found that a lot of cost data were required from the Head Office Accounting Department and the Quantity Surveyors. However, the replies to the Cost Control Manager's requests were either that the cost data were confidential or that they were busy and the cost data would only be provided later. Facing these obstacles, the Cost Control Manager reported to the Project Manager, who then sought assistance form the General Manager. The General Manager's gesture was very helpful and promised that he would ask his subordinates to coordinate. However, the situation did not improve when the Project Manager approached his subordinates. The General Managers actually on one hand pretended to offer assistance in the implementation of the new system and on the other hand reminded his sub-ordinates that other works are of higher priority and confidentiality of cost data are of greater importance. Therefore, the whole communication system was a

deadlock. It also created low moral among the site staffs including the cost control team staffs, because they were given the impression that the whole exercise was solely to entertain the foreign contractor who wanted to gather the confidential cost information from the local contractor.

Besides, for the local contractor, this mega project shared half the contract sum and resources that the company had at that time. Under the originally proposed joint venture organization, the Project Manager was seconded from the foreign contractor and supposed to be solely in charge of the project according to the project team concept However, as a majority joint venture partner, the local contractor was not willing to give up the control of this project, specially the General Manager. To allow the Project Manager to be in charge of the project completely implied that half of the local contractor's business was run by the foreign partner and the General Manager would control only the remaining half of the company's operations, although he could direct the Project Manager through the management board by one fifth of the vote he had. As a result, the General Manager was controlling the project as a "Back Seat Driver" through control of his Department Heads and their functional staffs who were seconded from these departments to the project team. In other words, there was not enough delegation of power to the Project Manager,

such that his authority, position and image were seriously affected under this unhealthy organization set up. Such an interference was not counteracted because the Project Manager was new to the local construction industry and not familiar with the local practice.

A similar situation was experienced by the Cost Control Manager. In the new cost control team, the quantity surveyors department head also intervened the Cost Control Manager's direction by influencing his sub-ordinates frequently. Therefore, the micro-politics and back seat driver situation in the project team had created many resistances as observed.

7.4 Other Reasons for New System Failure :

Another reason for the failure of the new system is the foreign contractor's over expectation of the local company's existing computerization report system during the first few days superficial review. They were too optimistic to the implementation of the new system and overlooked that even resistances were experienced and had to be overcome

long time after implementation in their American head office. Furthermore, time had not been allowed under this fast track project to implement the trial run of this complicated new system. Personnels were required to be trained up and to adopt to the new system. Moreover, the lack of expertise to start up the new system before smooth run discredited the new system and made it more difficult to implement, specially under discontinuity of trained staffs.

As a result, under the negative attitudes generated, increased in work load, and lack of support and resources allocation by the back seat drivers, the time required and usefulness of the new cost control report were completely out of expectation in comparison with the successful experience in the United States. Therefore, the cost spent and benefit resulted from this new system were considered not match. Subsequently the system was completely abandoned shortly after the Cost Control Manager resigned from his position.

CHAPTER VIII

CONCLUSIONS AND RECOMMENDATIONS

8.1 CONCLUSION OF FINDINGS

The implementation of the new site cost control system was not widely supported by the project team members. Resistance to the change was observed and further investigation by questionnaire survey reveals the following :

a. Those project team members who did not accept the new system have the common perceptions of an decrease in project team co-operation, a drop in the importance of the cost control report to their supervisor in assessing their performance, and their ability not being fully utilized under the new system.

b. To the contrary, those project team members who accept the new system have the common perceptions of a more co-operative team, an increase in the importance of the

cost control report to their supervisor in assessing their performance, and greater utilization of their ability under the new system.

c. The training course failed in convincing the members that the new cost control system would be better than the previous system, and in clarifying their role in the new system.

d. The change was implemented to a project team that was already having some morale problems.

Further analysis based on Pfeffer's political model reveals that the prerequisite conditions for occurrence of micro-political activities in an organization did exist in the joint venture project team. This was supported by observation that the micro-political activities has happened to such an extent that distrust and incorporation were created among the team members.

As the successful implementation of the new site cost control system demands the co-operation of all project team members on gathering accurate and timely cost data, exhibition of resistance by even few members can ruin the whole system. This was happened to the case.

8.2 RECOMMENDATIONS :

Lesson learnt from the case is that what people resist is not technical innovation in their works but social change, which relates to how they perceive the alterations on their established relationships. To facilitate a positive perception of the changed relationships, the following are recommended to be considered :

a. Before the implementation, the possible positive and negative perception of the employees on the alteration of their established relationships are to be forecast. Means are to be formulated and implemented to assist the employees to have positive perception of the alteration which may be in the form of consultation or participative sessions.

b. A co-operative work team will facilitate its members to adopt the new relationships.

c. The top management's support to the change will also encourage the employee's willingness to accept the new relationship.

d. The change should be designed to embody some elements of job enrichment.

e. The behaviour and attitudes of the employees after implementation of the change are to be studied and rectifying actions are to be taken if necessary.

f. The following prerequisite conditions for occurrence of micro-political activities are to be analysed before implementation of change :-

i. interdependence
ii. heterogeneous goals
iii. heterogeneous beliefs on means to achieve goals
iv. scarity of resources
v. dispension of power

Means should be adopted to avoid the micro-political activities being happened to such an extent that will hamper the group cohesiveness, which may include resolution of heterogeneous beliefs, re-organization of job duties, centralization of power, and establishment of fair rules in allocation of resources etc.

APPENDIX

Appendix I : Research Questionnaires (Part I and Part II)

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學生專題研究用箋
Student Research Projects

January 16, 1989

Dear Sir / Madam,

RESEARCH PROJECT ON ORGANIZATION CHANGE

Organization change is a common element in day to day management operations, especially in the dynamic business environment in Hong Kong. Among many other factors, the employee's response to the change is vitial to the success of implementation of the organization change.

The purpose of this research is to study the employee's attitudes and behavior before and after the implementation of a new site cost control system at Queensway Project. You are one of the very few project staff involving this change who are selected to give your opinion in this matter.

All replies will be kept strictly confidential and by no means to trace replies to any individual respondant. You are therefore encouraged to respond with your own real views rather than to guess a 'right' or 'best' answer.

Your participation to this questionnaire is essential to the success of this research. Please help by completing the questionnaire and return to Mr. King Wong with the return envelope attached. Telephone queries could be addressed to Mr. King Wong at 5-8132350 (office) or 3-367827 (res.).

Thank you for your kind assistance and co-operation.

Yours sincerely,

KING WONG, K. L. CHAN
THE CHINESE UNIVERSITY OF HONG KONG
THREE YEAR MBA STUDENTS

Encls.

PROPOSED QUESTIONNAIRE FOR THE MBA FINAL YEAR PROJECT

PART 1

(Please answer the following questions by ticking " √ " the appropriate space)

1. In the Joint Venture Project, your post is a

__ Q. S.

__ Estimator

__ Construction Manager

__ Cost Control Engineer

__ Others (. . . . .)

and you are employed by __ local

__ foreign contractor

2. Under the Departmental Control System :

2.1 Your job is __ directly related to cost control

__ indirectly

__ not at all

2.2 Your role in relation to cost control of the project is (YOU MAY TICK MORE THAN ONE ITEM)

__ Control Cost in supervision of daily operation

__ Collecting data for the cost control report

__ Analysis of data for the cost control report

__ Using the cost report for decision making in current project

__ Using the cost report for future project data

__ Others

(PLEASE CIRCLE THE APPROPRIATE RATING)

2.3 How do you rate the following :

		VERY				NOT VERY
2.3.1	The usefulness of the information provided in the cost report in assisting decision making	1	2	3	4	5
2.3.2	The adequacy of the information provided in the cost report in assisting decision making	1	2	3	4	5
2.3.3	The timeliness of the information provided on the cost report in assisting decision making	1	2	3	4	5

		VERY				VERY NOT
2.3.4	The fittness of the information in reflecting the actual cost status	1	2	3	4	5
2.3.5	The co-operation of the project team members in sharing the limited resources	1	2	3	4	5
2.3.6	The importance of the cost report to your superior in evaluating your performance	1	2	3	4	5
2.3.7	The extensiveness of the cost report being abused for personal interest	1	2	3	4	5
2.4	How often you have to explain the reasons of cost incurred in certain items of works	1	2	3	4	5
2.5	How often you request the others to explain the reasons of cost incurred in certain items of works	1	2	3	4	5
2.6	How do you rate the interference of others in your decision making	1	2	3	4	5
2.7	How do you rate the extent of your cost control function being perceived as conflict creation by others	1	2	3	4	5

		VERY				VERY NOT
2.8	How well do you think your ability in cost control are being utilized	1	2	3	4	5

3. Do you think the Departmental Cost Control System need to be changed

__ YES __ NO

KW/MBA7/rw
January 16, 1989

PROPOSED QUESTIONNAIRE FOR THE MBA FINAL YEAR PROJECT

PART 2

(Please answer the following questions by ticking " √ " the appropriate space)

1. Under the New Site Cost Control System :

1.1 Your job is __ directly related to cost control

__ indirectly

__ not at all

1.2 Your role in relation to cost control of the project is (YOU MAY TICK MORE THAN ONE ITEM)

__ Control Cost in supervision of daily operation

__ Collecting data for the cost control report

__ Analysis of data for the cost control report

__ Using the cost report for decision making in current project

__ Using the cost report for future project data

__ Others

(PLEASE CIRCLE THE APPROPRIATE RATING)

2.3 How do you rate the following :

		VERY				NOT VERY
2.3.1	The usefulness of the information provided in the cost report in assisting decision making	1	2	3	4	5
2.3.2	The adequacy of the information provided in the cost report in assisting decision making	1	2	3	4	5
2.3.3	The timeliness of the information provided in the cost report in assisting decision making	1	2	3	4	5
2.3.4	The fittness of the information in reflecting the actual cost status	1	2	3	4	5
2.3.5	The co-operation of the project team members in sharing the limited resources	1	2	3	4	5
2.3.6	The importance of the cost report to your superior in evaluating your performance	1	2	3	4	5
2.3.7	The extensiveness of the cost report being abused for personal interest	1	2	3	4	5

		VERY				NOT VERY
2.4	How often you have to explain the reasons of cost incurred in certain items of works	1	2	3	4	5
2.5	How often you request the others to explain the reasons of cost incurred in certain items of works	1	2	3	4	5
2.6	How do you rate the interference of others in your decision making	1	2	3	4	5
2.7	How do you rate the extent of your cost control function being perceived as conflict creation by others	1	2	3	4	5
2.8	How well do you think your ability in cost control are being utilized	1	2	3	4	5

3. Do you think the Departmental Cost Control System need to be changed

__ YES __NO

4. Have you attended training course in relation to the Site Cost Control System

__ YES __ NO

(If answer NO, then proceed to question no. 6)

5. How do you rate the training course in

		VERY				NOT VERY
5.1	explaining the new site cost control system	1	2	3	4	5
5.1	convincing you that the new site cost control system is better than previous system	1	2	3	4	5
5.3	clarifying your role in the new system	1	2	3	4	5

6. Your workload has been

_____ substantially increased

_____ no change

_____ moderately increased

_____ reduced

after the change to the New Site Cost Control System.

KLC/KW/rw
January 16, 1989

Appendix II : Summary of Ratings in Questionnaires

Respondent	Construction Managers		Quantity Surveyors						Cost Engineers			Accountant	
	1	2	1	2	3	4	5	6	1	2	3	1	2
1. Rating of the system	12/14	13/13	10/16	12/12	11/11	11/11	11/9	14/7	7/7	6/5	18/11	10/14	18/8
2. Previous system needs to be changed	Y	*	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	Y
3. Co-operation of project team	2/3	5/4	5/5	3/3	5/5	4/3	4/4	3/4	3/3	2/1	4/3	2/2	5/1
4. Abuse of cost report	4/2	3/3	3/3	2/2	3/3	3/4	3/3	5/5	2/2	4/3	4/3	3/4	5/4
5. Importance of cost report to supervisor	2/3	4/3	5/5	3/3	4/4	3/4	2/2	2/2	2/2	2/2	4/2	3/3	4/3
6. Frequency of explaining to others	2/2	3/3	1/5	1/1	5/5	3/3	3/3	2/1	5/5	2/1	4/2	5/5	4/2
7. Frequency of requesting others to explain	3/3	3/3	2/5	1/1	2/2	2/3	4/3	5/3	5/5	1/1	4/2	5/2	5/2
8. Rating to interference of others in decision making	3/3	3/3	5/5	1/1	3/3	3/4	3/3	*/*	2/2	3/2	5/3	4/4	*/2
9. Rating to being perceived as conflict creation	4/4	3/4	3/5	4/4	2/2	3/3	3/3	2/2	2/2	2/3	4/2	4/4	*/1
10. Rating to ability being fully utilized	2/3	*/3	4/5	4/5	4/4	3/3	3/3	4/3	5/5	3/3	5/3	4/4	5/3
11. Attended training course	N	N	N	*	N	Y	N	Y	Y	N	Y	N	Y
12. Rating of training course in													
a. explaining new system	*	*	*	*	*	2	*	3	4	*	2	*	5
b. convincing new system better	*	*	*	*	*	4	*	4	4	*	1	*	5
c. clarifying new role	*	*	*	*	*	3	*	4	3	*	1	*	5
13. Workload after change	0	+	+	+	+	+	+	+	+	+	+	0	+

Notes : 1. A / B - A refers to rating given to the old system
- B refers to rating given to the new system

2. Rating in (1) is the summation of ratings given in question 2.3.1 to 2.3.4
3. * indicates that the question is not answered
4. In item 13, "+" stands for workload increase, "0" stands for no change

Appendix III : Analysis of Questionaires Response

Number of Persons	Group 1 : Existing System is Better	Group 2 : No Preference on Either	Group 3 : New System is Better	Subtotal
1. PROJECT TEAM CO-OPERATION				
a. less co-operative	1	0	1	2
b. same	2	3	1	6
c. more co-operative	0	2	3	5
2. ABUSE OF COST REPORT				
a. more abuse	1	0	3	4
b. same	1	4	2	7
c. less abuse	1	1	0	2
3. IMPORTANCE OF COST REPORT TO SUPERVISOR IN ASSESSING PERFORMANCE				
a. more important	0	1	2	3
b. same	2	3	3	8
c. less important	1	1	0	2
4. FREQUENCY OF EXPLAINING TO OTHERS				
a. more frequent	0	0	4	4
b. same	2	5	1	7
c. less frequent	1	0	0	1
5. FREQUENCY OF REQUESTING OTHERS TO EXPLAIN				
a. more frequent	1	0	4	5
b. same	1	4	1	6
c. less frequent	1	1	0	2
6. INTERFERENCE OF OTHERS IN DECISION MAKING				
a. more interference	0	0	2	2
b. same	3	4	1	8
c. less interference	0	1	0	1
7. EXTENT OF BEING PERCEIVED AS CONFLICT CREATION				
a. more extensive	0	0	1	1
b. same	2	4	2	8
c. less extensive	1	1	1	3
8. COST CONTROL ABILITY				
a. more fully utilized	0	0	3	3
b. same	1	3	2	6
c. less fully utilized	2	1	0	3

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